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ABSTRACT

Designed to encourage discussion of technology and U.S. government information policies and a clearer understanding of how the characteristics of electronic formats affect the availability of information, this report focuses on the implications for the library, education, and research communities that have heretofore assumed some responsibility for providing government information to the general public. Five issues are addressed: (1) challenges to the U.S. government information policies; (2) the roles of the private sector and government responsibilities in making information available; (3) models for the analysis of the distinctive characteristics of information in electronic formats; (4) a changing framework for library services; and (5) the consequent influence of these four sets of issues on the Depository Library Program, a Congressional program designed to provide equitable public availability of government information. It is concluded that circumstances warrant a reassessment of library responsibilities with a view to new opportunities made feasible by technology, and that this reassessment can only be made effectively when the Government Printing Office initiates distribution of some electronic products to depository libraries. "Government Information in Electronic Format: A Statement of Principles," a draft statement by the Association of Research Libraries Task Force on Government Information in Electronic Format, is appended. (KM)

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Catalysts for New Partnerships

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TECHNOLOGY & U.S. GOVERNMENT INFORMATION POLICIES:

CATALYSTS FOR NEW PARTNERSHIPS

Report of the
Task Force on Government Information in Electronic Format

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Explanatory Note

The body of Government information considered in this report is that which has been collected or created by, or on behalf of, agencies of the U.S. Government using tax dollars. Unless specifically noted, this report DOES NOT address information properly classified for reasons of national security or information protected under the Privacy Act. This report DOES address public government information such as: statistical data gathered from the population, agricultural, or economic Censuses (but not personal or corporate details), financial data from the Commerce or Treasury Departments, Congressional bills and laws, federal regulations, scientific and technical reports issued by agencies such as NASA or the Department of Energy, and so forth.

Technology & U.S. Government Information Policies: Catalysts for New Partnerships is Report No. 3 of the ARL Task Force on Government Information in Electronic Format. Reports Nos. 1 (October 1986) and 2 (April 1987) were issued as working papers and have been substantially incorporated into this report.

TECHNOLOGY & U.S. GOVERNMENT INFORMATION POLICIES:

CATALYSTS FOR NEW PARTNERSHIPS

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TECHNOLOGY & U.S. GOVERNMENT INFORMATION POLICIES: CATALYSTS FOR NEW PARTNERSHIPS

EXECUTIVE SUMMARY

The terms and conditions of public availability of U.S. Government information are very much in question. Technological advances in information storage and retrieval have created circumstances and concerns about access to and dissemination of information in electronic formats. Questions surrounding the issue are entangled with concomitant pressures to reduce Federal spending, shrink the size of government, minimize government competition with private enterprise, and gain a national competitive advantage---both economic and strategic---over foreign nations. Longstanding tensions inherent in the laws, regulations, and practices that collectively make up U.S. Government information policies are exacerbated by these pressures and by the opportunities, challenges, and financing questions posed by information in electronic formats.

Technology, moving faster than policy development, has left U.S. Government information programs resting on uncertain foundations. This report is the result of an effort to develop a framework for understanding---philosophically, functionally, and fiscally---the patterns that exist for government information today, and the shifts in those patterns resulting from the introduction of government information in electronic formats. Two elements of such a framework are presented: a taxonomy to acknowledge distinctions and categorize the characteristics of government information in electronic format, and a model that identifies potential value-added processes for an information system. What is urgently needed in addition are studies on the budgetary mechanisms that support government information creation, delivery, and usage, and the impact of different electronic formats on these mechanisms. The results of such analysis should contribute to a clearer picture of present and prospective public and private financing of government information programs.

The report focuses on the implications for the library, education, and research communities that have heretofore assumed some responsibility for providing government information to the general public. Five issues are addressed: challenges to U.S. Government information policies; the roles of the private sector and Government responsibilities in making information available; models for analysis of the distinctive characteristics of information in electronic formats; a changing framework for library services; and the consequent influence of these four sets of issues on the Depository Library Program, a Congressional program designed to provide equitable public availability of government information.

The Association of Research Libraries (ARL) issues this report to encourage discussion of technology and U.S. Government information policies and a clearer understanding of how the characteristics of electronic formats affect the availability of information. Technology offers opportunities that may be to the advantage of users and both public and private sectors. However, political decisions about meeting Government obligations to provide information should not be contingent on format. The U.S. Government's obligation to be accountable to citizens, and to make available information created or collected with tax dollars, is fulfilled in part through partnership with public and academic libraries. Circumstances warrant a reassessment of library responsibilities in view of new opportunities made feasible by technology. ARL seeks to collaborate with others to develop recommendations for changes in the Depository Library Program. Those interested in working with ARL on this effort are encouraged to contact the ARL office in Washington, D.C.

I. INTRODUCTION

> *It is the nature of the information itself, its significance in fulfilling citizenship information needs and other government responsibilities, that should drive decisions about choice of format, the level of value-added enhancements supplied by the Government, and about how dissemination is to be financed.*

Impact of Technology

Technological developments in the means of producing and disseminating information products have the potential for revolutionizing access to Federally funded information resources. Technology offers opportunities of enhanced access delivering information faster, to more locations, with more effective retrieval capabilities, and in formats that provide users greater flexibility for individual manipulation of the data. However, the full potential of technology is tempered by constrained budgets, controversy about the extent to which the Government SHOULD spend tax dollars to actively disseminate information, and about the possibility that portions of the population could be left unserved if information is available exclusively in electronic formats. For example, vital data, such as detailed Census findings, are increasingly only available on computer tapes. This means these data cannot be used without certain skills and equipment. Instead of just taking a book off the shelf, individuals may need to know complex computer languages and programs, or have access to the assistance of specialists. At the same time that computer technology improves access for some people, access for others is more restricted.

While technology offers opportunities that may be to the advantage of users and both public and private sectors, political decisions about meeting Government obligations to provide information should not be contingent on format. It is the nature of the information itself, its significance in fulfilling citizenship information needs and other government responsibilities, that should drive decisions about choice of format, the level of value-added enhancements supplied by the Government, and about how dissemination is to be financed.

There are fundamental principles inherent in a democracy that must be reflected in government information policies and these principles should not be dismissed because the format of the information changes. Inattention to fundamental principles in support of public availability of Government information allows a vacuum to form wherein decisions are based largely on environmental pressures such as political polemics, budgetary constraints, marketplace economics, and/or administrative convenience. Decisions so made can result in practices of benefit to one segment of our society but to the disadvantage of others.

U.S. Government Information Policies

Federal policies affecting public availability of government information arise from a wide variety of laws and regulations, some of which do not offer clear guidance when addressing issues associated with electronic information. Pervasive and profound economic, political, and

technological trends have exacerbated longstanding tensions inherent in these policies. This summary is not comprehensive but is intended to highlight some of the basic elements of the debate.

Historically, there has been Federal support for education and libraries in general. The government of the United States is founded on the premise that there will be an informed electorate, with educated, responsible citizens participating in their governance. This obligation to provide the public with information that ensures government accountability and contributes to an informed citizenry is the foundation of laws within Title 44 of the *U.S. Code* that provides for the Government Printing Office (GPO) Sales Program and the Depository Library Program.

The Depository Library Program, a Congressional program administered by GPO, places collections of U.S. Government publications in nearly 1400 academic, public, and special libraries. The libraries receive the publications at no direct cost in exchange for an agreement to organize and provide service to the material for the general public. The purpose is to assure citizens of no-fee access to information by and about the government in geographically dispersed and politically neutral settings. Electronic government information has not yet been distributed to depository libraries and plans to test the usefulness and economic feasibility of doing so have set off considerable debate about if and how it might be done.

The Freedom of Information Act is based on the presumption that the government and information of the government belong to the people, and the same reasoning underlies the Copyright Law prohibition of copyright of U.S. Government documents. Public access to information produced by government agencies has been a long standing element in support of American public education and the economy; and libraries have played a key role in the delivery of such information to the public. In addition, Federal government agencies, increasingly over the last fifty years, turn to universities and other research organizations to conduct research in support of the missions of those agencies. Contracts and grants have cemented the partnership between the government and research institutions in mutual support of an educated citizenry, an improved economy, and a better society.

On a number of fronts now in a seemingly endless variety of ways, these basic premises and partnerships are now challenged. Three major trends are:

- **Privatization of Government Functions**
  The move towards privatization of public functions, an international trend, is part of an effort to shrink the size of government by assigning government function to the private sector. Privatization of information programs that had previously been an integral part of government agency programs can have undesirable consequences such as: increased prices for services that lead to classes of information-rich and information-poor; elimination of limited-use reports or service aspects of a program not supportable when subjected to commercial, market-driven product design; the possibility of private, self-interested influence over the delivery of public information; and exertion of copyright or copyright-like control over public information.

- **Reduction of Government Agency Budgets**
  Another strategy for shrinking government has been to reduce agency budgets. This has had a profound impact on information programs and services of agencies as well as on the availability of government information in libraries.

It has also led to unusual arrangements between federal agencies and commercial information companies to develop jointly agency electronic information systems--arrangements that sometimes lead to undesirable agreements that give exclusive control of public information to private organizations.

- **Over-zealous Protection of Government Information**
  A penchant for secrecy has led to overclassification of government information, efforts by the Defense and intelligence community to impose controls on unclassified information, and pollution of information sources with an active disinformation campaign intended to mislead all except those with a "need to know."

Some basic areas of contention, where policy is unclear or challenged, include the extent to which tax dollars should fully support the collection and active dissemination of government information and when user fees are acceptable to recover some of the costs of these activities, and how to determine the proper balance between encouraging commercial entrepreneurs to enter the market with government information products while maintaining government responsibilities to provide information services.

II. PRIVATE SECTOR ROLES & GOVERNMENT RESPONSIBILITIES FOR DISTRIBUTING INFORMATION

> *The test is not whether a for-profit firm could sustain an information product if the government did not have a similar product, but rather whether there is a legitimate governmental role and public need in creating and distributing particular information products.*

Government information, in a variety of formats, is made available to the public by a diverse assortment of providers including the Government itself (e.g. GPO, NTIS, and/or direct from source agencies including Congress), commercial and non-profit information companies, and libraries. This variety of sources of access to the same information is in the public interest since it ensures that users, both within and outside of government, have available a sufficiently varied array of sources to support judgments on data credibility and assessment of government accountability. However, questions have been raised about Government duplication of commercially available information products. The following section addresses the distinction between government responsibilities and private sector roles in how government information is disseminated regardless of format.

Private Sector Roles

The private sector, both for-profit and non-profit, plays an active and important role in distributing government information in print as well as in electronic form. Entrepreneurs can invent new information products that meet particular market demands. New products can improve the well-being of consumers by identifying and filling consumer demands more effectively or by offering lower costs. As electronic systems grow in importance, private entrepreneurs may be expected to develop new products that take advantage of the new opportunities.

The private sector has a number of advantages as vendors of information products. The spirit of entrepreneurship allows a firm to create a product and try it in the market place. The ability to take commercial risks with venture capital funding means that an entrepreneur may be able to develop products quickly and follow an instinctive sense of consumer demand without unwieldy administrative consultation and without putting it to a political test within an electoral body. Existing firms are under continual market pressure to hold down costs, to meet consumer demands, and to innovate because they are aware that other entrepreneurs stand ready to enter a market should existing firms let costs rise, product quality deteriorate, or an opportunity to innovate pass. As a consequence, entrepreneurs are effective institutions for distributing government information as they are for managing many other resources in our society.

The private sector, however, has some disadvantages. If private markets were a sufficient vehicle for all our social decisions, we would have no need for government. Private markets have proved to be deficient in supplying police, education, roads, defense, and courts. Indeed, the very concept of private markets depends on the definition and enforcement of property rights by governmental institutions. Moreover, unregulated private markets may yield results that are suspect with respect to pollution, congestion, and resources of indefinite ownership. Finally, the operation of markets may yield outcomes of particular distributions of wealth, power, and status that may be decided, through political institutions, to be unfair. For these reasons, the progress of our society

depends on the effective, fair, and innovative development of government institutions, just as it depends on an efficient and innovative private sector.

Concerns about private sector development or operation of Government information systems include the uncertainty of corporate stability or continuity of service, the imposition of proprietary control over the content or use of public domain information, and the imposition of high, profit-motivated fees for access to information created or collected with public funds.

Government Responsibilities

What is the appropriate scope for government action in providing information and where should we look for effective private action? For certain classes of information, full and effective government participation in the provision of information products is essential. For other classes, government participation should be limited or the information collection activity eliminated.

In particular, where broad citizen access to information is essential to the operation of our democratic institutions, effective government involvement in the production and distribution of information products is important. The status of bills before Congress, information about tax collections, budgets, and expenditures, and description of government policies and programs constitute a class of information essential to our citizenship roles. We want voters to be informed, and so we want to continue to subsidize, via tax funds, general access to this information. Potential candidates for public office need to have sufficient and convenient access to information about governmental programs and practices to raise substantive discussions about what government should be doing.

Indeed, the level of information to which legislators themselves have ready access depends on an active and subsidized program of government publication. The effectiveness of electoral institutions in managing a complex governmental enterprise, then, depends critically on ready and general availability of documents that describe governmental actions, programs, and policies.

For this class of information, government tax-financed creation and distribution of products is essential. Our democratic institutions will not engender trust if information about their activities is not broadly distributed and routinely and conveniently available. As electronic formats become desirable means for citizen access, then, the government, and in particular, the Congress, should play an active role in supporting appropriate, new electronic information products and delivery systems.

There may be other classes of information where the pursuit of a particular governmental policy militates subsidy of distribution of appropriate information. For example, public health programs to limit the spread of infectious diseases depend to a considerable degree on subsidized information flows. Programs to help the poor often must be advertised to be effective. Government efforts to enhance the pace of research and scientific developments may also require an active program of underwriting the dissemination of research reports and scientific information.

In other cases, the government itself requires collection and use of particular kinds of information to pursue its ends. Effective development of monetary and fiscal policies depends on an effective program of gathering and distributing economic information. The regulation of the monetary supply, of international trade, and of public utilities requires that information be gathered and shared publicly. The Census of Population is needed as a basis by which to allocate

Congressional seats.

In these cases, government publication and distribution of information products is valuable and appropriate. Of course, if the government failed to publish such products, private firms would find more opportunities to create products. However, our society will be the poorer if it does not have tax subsidies for certain kinds of information products. The test, then, is not whether a for-profit firm could sustain an information product if the government did not have a similar product, but rather whether there is a legitimate governmental role and public need in creating and distributing particular information products. The value of tax supported publication has long been recognized for print products. The same logic militates the tax support of particular electronic publications.

The federal deficit rightfully highlights the need for reassessment of federal spending patterns. Government activities associated with the public availability of government information have costs associated with them and should be subject to the same scrutiny applied to other parts of agency budgets. Essential to undertaking an effective, long-term view of agency information programs is identification of the purposes that the information content serves, within and outside government, and a judgment of its relevance to fulfilling government responsibility for making information available.

The government may find its purposes well met for certain information sets that support a particular market, e.g., crop reports, by gathering the information with tax support but allowing consumers to support distribution through fees. How the Depository Library Program might be affected by such distribution is a question that should be addressed in a review of the program. See pages 21-22.

In some instances, there is no compelling reason for government involvement. When the government has no particular advantage, or need, to gather a given set of information, market forces should lead to an appropriate array of private information products.

Defining Complementary Partnerships

There are compelling reasons to delineate complementary roles for the Government, libraries, commercial and non-profit information organizations in making government information available to the public.

All libraries designated as part of the Depository Library Program (a mix of publicly and privately supported organizations), and many other libraries as well, have and will continue to play key roles in fulfilling Government information responsibilities by providing no-fee access for the general public to government documents. New electronic formats for the information does not change library commitment to that role. What is key is that Government and libraries collaborate on developing a common understanding of respective responsibilities to the public.

All non-profit institutions may have special roles to play in areas such as health, education, and welfare where non-profit institutions have long been important. Government may encourage publication by non-profit agencies of information products based on government data sources. Of course, the mix of for-profit and non-profit activities will continue to evolve in response to changing technical and market opportunities.

The government can support the development and distribution of many information products by

contracting for them in various ways. In such cases contracting ought to be conducted in a manner to encourage competition and caution should be exercised concerning what, if any, restrictions a contractor may exert over content or public use of the information product. What is needed is a clearer picture of how government responsibilities for public availability of government information in electronic formats might be fulfilled in partnership with the private sector without loss of the characteristics that make this information distinctive: the absence of restrictions on use including, for basic government information, absence of a fee.

The private sector has already contributed to the development of a diverse array of information systems that form critical supports for all aspects of our democratic society. If common goals can be established the private sector with its acknowledged strengths could also contribute in a significant way to fulfilling Government responsibilities to make information available to the public. What is key is identification of mutual private sector - Government goals that support partnerships for the delivery of public information unencumbered by copyright or other use restrictions. For that information where broad citizen access is essential to the operation of our democratic institutions, such partnerships must function so that the costs do not force the imposition of user fees by the Government or libraries.

III. FRAMEWORK FOR POLICY ANALYSIS

> *HOW government information in electronic format is disseminated will have an impact on existing partnerships between the government and for-profit and non-profit institutions. The partnerships may, in fact almost certainly will, continue in some capacity. However, the responsibilities, especially those concerning which partner incurs what costs, are very much in question.*

The characteristics of government information in electronic formats demand a new framework for analyzing and defining how this information should be made available to the public. Two elements of such a framework are presented: a taxonomy to categorize the characteristics of government information in electronic format, and a model that identifies potential value-added processes for an information system. In addition, hypothetical scenarios illustrate the need to consider four key questions as decisions are made about approaches to distributing electronic information.

Taxonomy of Government Information in Electronic Format

Identification of a taxonomy or classification of government electronic information systems or products would contribute to policy analysis. For example, electronic information products or systems might be categorized on the basis of the following four dimensions.

1. **Volatility.** Some electronic systems are highly volatile--dynamic and highly time sensitive; others are static.
2. **Public Policy Relevance.** Some systems convey information that is highly relevant to consideration of important public policies and thus are of broad public significance; others have information of little policy relevance and are of interest only to a specialized audience.
3. **Value to Research.** Some systems convey information that is highly significant for research; others convey information of limited research value.
4. **State of System Development.** Some systems could be compared to wholesale products, requiring significant hardware and value-added software support before end-users may make use of it; others are more like retail products, fully packaged and presented for end-users.

These four dimensions are described in terms of two extreme points on a spectrum. In reality, consideration of the characteristics of a specific system following such a classification will fall anywhere between the two extremes. The taxonomy is not intended as an absolute measure for policy making but rather is put forward to illustrate that not all government information in electronic format is the same and to identify some obvious categories of systems that will encourage policy discussions to move from generalities to specifics.

Each niche of such a taxonomy may suggest different ways to address policy issues associated with dissemination of the information. The taxonomy could be subdivided further into files that are textual as opposed to other kinds of information as well as by the anticipated extent of public audience for the information, should these kinds of characteristics, or others, need to be considered in making policy decisions.

Taxonomy of Government Information Systems

STATE OF SYSTEM DEVELOPMENT	VOLATILITY: Dynamic		Static		RELEVANCE TO PUBLIC POLICY
Retail*	Combination 1 Dynamic High relevance to public policy High value for research System ready for end-user ("retail product")	Combination 2 Dynamic High relevance to public policy Limited value for research System ready for end-user ("retail product")	Combination 3 Static High relevance to public policy High value for research System ready for end-user ("retail product")	Combination 4 Static High relevance to public policy Limited value for research System ready for end-user ("retail product")	High
Retail*	Combination 5 Dynamic Little relevance to public policy High value for research System ready for end-user ("retail product")	Combination 6 Dynamic Little relevance to public policy Limited value for research System ready for end-user ("retail product")	Combination 7 Static Little relevance to public policy High value for research System ready for end-user ("retail product")	Combination 8 Static Little relevance to public policy Limited value for research System ready for end-user ("retail product")	Little
Wholesale*	Combination 9 Dynamic High relevance to public policy High value for research System requires support ("wholesale product")	Combination 10 Dynamic High relevance to public policy Limited value for research System requires support ("wholesale product")	Combination 11 Static High relevance to public policy High value for research System requires support ("wholesale product")	Combination 12 Static High relevance to public policy Limited value for research System requires support ("wholesale product")	High
Wholesale*	Combination 13 Dynamic Little relevance to public policy High value for research System requires support ("wholesale product")	Combination 14 Dynamic Little relevance to public policy Limited value for research System requires support ("wholesale product")	Combination 15 Static Little relevance to public policy High value for research System requires support ("wholesale product")	Combination 16 Static Little relevance to public policy Limited value for research System requires support ("wholesale product")	Little
	High	Limited	High	Limited	

VALUE FOR RESEARCH

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Scenarios for Dissemination

HOW government information in electronic format is disseminated will have an impact on existing partnerships between the government and for-profit and non-profit institutions. The partnerships may, in fact almost certainly will, continue in some capacity. However, the responsibilities, especially those concerning which partner incurs what costs, are very much in question. Policy development for dissemination of government information in electronic format is in great flux and discussions with representatives of various government agencies suggest that there may be quite a number of approaches. Even so, it is important to anticipate the impact of different courses of action. Hypothetical scenarios are described on pages 11-12 to illustrate, if not all of the possible options, at least some of the general approaches that may be taken.

By comparing one scenario to another it becomes clear how government information could be provided with varying levels of "user accessibility mechanisms." While an awkward phrase, the notion of user accessibility mechanisms is significant to any definition of the government's responsibilities for ensuring public availability of government information in electronic format. For example, the government agency may produce electronic files with no user accessibility mechanisms, expecting that if those mechanisms are needed, they will be added and paid for by someone else. This is the situation in Scenario One (Limited Government Role).

At the other extreme, a centralized government agency provides full support for an electronic information product that an inexperienced end user can master quickly -- Scenario Four (GPO Provides Full Support). Close to this scenario is the Depository Library Program as we know it today, in which government agencies create retail information products that are centrally assembled, cataloged, and shipped to depository libraries. The depository library is responsible for space, collection management, and services that make the government information available. The depository library may even purchase expensive supplementary indexes, but the government agency produces an information product which still arrives more or less user ready.

There is, of course, a wide range between these two extremes. It is a range that can have even more complex approaches than those illustrated here -- with complexities which on the surface make it difficult to determine costs and predict the allocation of costs among government agencies, libraries, and users.

SCENARIOS FOR DISSEMINATION OF GOVERNMENT INFORMATION IN ELECTRONIC FORMAT

SCENE ONE: Limited Government Role

Government offers data on tape without charge for use by depository libraries. If accepted on deposit, libraries are responsible for mounting datafiles on local systems, providing access to the data to users, training staff and users in methods for access to data.

Other intermediaries may also acquire data and process it for resale and use by libraries and others. Many intermediaries may compete in distributing the information.

Users are expected to be sophisticated in electronic means of communication. They may have to use programming languages, e.g., Cobol or Pascal, in order to extract needed information or be willing to pay for such service.

Examples: Census of Housing Tract and Block level data
LandSat geographical information

SCENE TWO: Government Agency Manages Dissemination

Agency puts data in a form usable by some libraries and by intermediaries. Each agency acts on its own. Agency may contract with an intermediary for the provision of on-line access, but agency sets standards and provides some financial support for data preparation.

Library may pay hourly usage fees to agency or intermediary for use. Data resides on agency or intermediary computer; use requires telecommunications.

Users may pay fees to the library for the services of the librarian and for telecommunications. Users may have to learn a software package like SAS or Lotus 1-2-3 to use numeric information effectively.

Example: Library of Congress Tape Distribution Service

SCENE THREE: Government Printing Office Acts as Publisher

The Public Printer requires agencies to provide GPO with the raw data, as if in manuscript form. GPO puts the information in a standard format, provides public domain software tools for access or stipulates a generic software tool as user interface. The Public Printer disseminates the electronic information through the Depository Library Program.

GPO may contract with intermediaries for service much as private printers manufacture print products. However, the Public Printer remains responsible for price and service.

The Library receives an electronic information product that requires a local system to support it, but the support requirements are standardized and therefore useful for a variety of information products, for example, a personal computer with a CD-ROM drive and a common software product.

Training requirements for librarians are relatively modest.
Users may pay a small fee for use of a personal computer and training modes of access but learn to use a common interface with about as much effort as required to use the *Monthly Catalog*.

Example: GPO distributes a CD-ROM version of the *Monthly Catalog* free to depository libraries

SCENE FOUR: Government Printing Office Provides Full Support

GPO provides full support for an electronic information product that an inexperienced end user can master quickly. If product is delivered via telecommunication lines, costs are paid by the Government.

The library provides space and manages services for the collection of electronic information products.

Users may use the information without charge even for computer use.

Examples: *Congressional Record* CD-Rom
Current status of bills before Congress On-line
Federal Register CD-Rom
Patent and Trademark Office *CASSIS* Index On-line

SCENE FIVE: Data to the Highest Bidder

Government Agency auctions off the right to its data to the highest bidder (via contract, license, or lease), provides exclusive rights to dissemination for an agreement by winner of auction to create a product that is available to the public. The Agency uses the proceeds to further its vital public mission, say underwriting grants for research in medicine.

The intermediary who wins the auction develops retail products and markets them on a for-profit basis.

The Library must pay the retail price for the electronic information product. It can define the terms of public access to the product much as for any other item in its collection. The number of libraries who choose to acquire the data may be limited by the expense.

Users may face fees per unit of use of the electronic product, fees that reflect the cost of the license to the data as well as rates for telecommunications, local computer time, and librarian services.

Example: The Commerce Department lets a contract for exclusive rights to disseminate reports collected by the National Technical Information Service.

Key Considerations

Four questions should be considered by government agencies, or libraries acting as intermediaries, as decisions are made about how to provide the public with government information in electronic formats. Responses to these questions, when applied to a particular information system, may suggest how access to that system should be paid for--for example, fully tax supported or partially tax supported with intermediaries and/or users paying part of the costs.

1. What is the significance of the information in the system for the development, pursuit, or assessment of public policy positions?

2. What are the "user accessibility mechanisms" or value-added processes needed and/or added by the creator of the information, the mediator of the information, and the user of the information?

3. What are the relative costs of adding specific value-added characteristics at any point in the information chain (creation, mediation, use) in order to assure equitable public availability of government information? And how will the costs of providing these value-added processes be distributed among federal and state agencies as well as private organizations?

4. If a shift in costs (among government, libraries, and users) is anticipated when this government information is disseminated in an alternate format, how will this affect resource sharing among libraries and the ability of the depository library system to support no-fee public access?

A Value-added Model

A search for a means to analyze such complex and shifting relationships and responsibilities identified a model in a book by Robert S. Taylor titled *Value-Added Processes in Information Systems* (Norwood, N.J., Ablex Publishing Corp., c1986).

Taylor views an information system as a totality from originator to end-user. His definitions and conceptualizations, particularly the transformation of a "wholesale" information product through value-added processes into one that is "retail," is highly applicable. Taylor defines "value-added" activities as those procedures that strengthen or render more accessible messages in an information system. His definition of an information system includes librarians in their function of mediating information to the public, as well as others such as analysts, evaluators, and synthesizers who perform similar functions. In viewing the transformation of the "wholesale" product, in this case raw government data which is unusable without mediation or intervention, into a "retail" information source, the model illustrates how responsibilities for adding value may shift among originators, mediators, and users. It also suggests the kinds of changes needed in total information systems as electronic information is substituted for print sources.

Taylor's model, based on 23 elements, allows an assessment of the presence and quality of values added at each stage of the information process, that is, by the originating source, the library or other mediating service, and the user. It stresses end-user needs and the structure of the information environment as major elements in the evolution and evaluation of information systems. The fullest application of the model implies the creation of problem-clarifying systems, significantly different from question-answering systems.

Together, the value-added model described by Taylor and the taxonomy of government information in electronic forms, provide mechanisms to address the four key considerations in planning for public availability of any particular information system; they may also lead to general conclusions about how certain categories of government information should be disseminated.

IV. NEW FRAMEWORK FOR LIBRARY SERVICES

The evolution of a bimodal library environment that encompasses both print and electronic formats will also lead to a reexamination of resource sharing among libraries. Ownership of information resources becomes less significant than access to information and leads to the development of new access and delivery systems.

Government information---its creation and dissemination---is a microcosm of the elements and layers of a new paradigm for libraries. The prospect of GPO providing government information in electronic format to depository libraries accelerates the need for libraries to address the shifting paradigm and turn concepts into very real questions of library and public policy.

Libraries face an exciting view of the future in which the present paradigm or framework of library thought is changing in response to a new information reality. "Electronic information" and "electronic communication channels" both play strong roles in shaping the new context. They require of libraries a new paradigm not because they are "new" but because they have some essential characteristics with which we must deal that are different from anything we have dealt with up to this point. Most library collection resources (paper, microformat, tapes, sound recordings, maps, AV materials, etc.) exist in "handleable" form and are delivered physically. Electronic information, however, is created in digital form, is stored digitally on a variety of computer disc devices, and can be delivered digitally over a variety of telecommunications/telephonic networks.

The environment for providing users with access to electronic information resources is significantly different from a traditional, print-based library. Diversity, rather than uniformity, and varying information access skills, characterize gateways to electronic information. There are few parallels in print formats to the complexity of technology and mediation between user and data that characterizes the emerging electronic environment. A computer tape or CD-ROM containing data is useless technology without the interfaces that enable the information to be retrieved. The degree of mediation required varies, but is most substantial in instances when the originator of electronic information does not provide the needed interface at point of creation.

There is increasing need, because most users lack all the necessary computer skills and require an intermediary, for librarians in archives or libraries housing machine-readable data to add information and therefore value to these resources in order to make them more readily usable by a wider audience. In a sense such librarians are information technologists working with a variety of print and non-print formats, electronic databases, and other sources and adding their skills in retrieving, reformatting, interpreting, and summarizing data.

The evolution of a bimodal library environment that encompasses both print and electronic formats will also lead to a reexamination of resource sharing among libraries. Ownership of information resources becomes less significant than access to information and leads to the development of new access and delivery systems.

Because of the breadth and depth of their collections, research libraries tend to serve as resource collections for other libraries. As more multitype libraries have used OCLC or RLIN for retrospective and current cataloging, the presence of their holdings in these networks has spread

interlibrary loan requests among a larger number of libraries, although the general pattern of research libraries as net lenders seems to be continuing. Evolving patterns associated with electronic information will have a significant impact on the role of research libraries in the provision of national information services. Catalogs of research libraries could serve as regional or national gateways that contain references to information in electronic as well as printed formats whether held locally or elsewhere. This could lead in turn to an increased emphasis on linkages with state-wide and regional systems through advanced telecommunications networks. It is unlikely however, since the use of electronic sources requires larger capital and personnel investments, that sharing will necessarily lead to a reduction of current expenditures for any individual library.

V. THE DEPOSITORY LIBRARY PROGRAM

> *The prospect of the delivery of government information in electronic form through the depository program raises important questions about whose budget will be affected as patterns change: the government agency's, the library's, the user's? . . . It is critical that the Government Printing Office initiate distribution of some electronic products to depository libraries immediately in order that participants (within and outside of Government) gain experience with the practical and financial consequences. This experience will contribute information essential for Government and library planning for the future of the program.*

Within the Depository Library System of nearly 1400 libraries, a slightly different pattern of resource sharing exists. The general make-up of the system provides for not more than two Regional Depository Libraries in each state that assume responsibility to permanently maintain a comprehensive collection of government documents. (There are presently 53 regional libraries in the system.) Regional collections exist in public and private institutions in a variety of academic, state agency, and public libraries. In addition, libraries designated as Selective Depository Libraries may elect to be comprehensive and may or may not maintain the collection permanently.

Strong depository collections, including Regional Depositories, reside in a wide variety of types of libraries with varying degrees of institutional resources and different institutional missions. As resource sharing becomes more expensive, the ability and willingness of some Regionals to serve as resource centers is in question. As the pattern of resource sharing among different kinds of depository libraries changes with the introduction of electronic formats, it is possible that participating libraries will define new scopes for their depository collections and offer a more focused but well defined array of services for the collection.

The particular kind of electronic format chosen to make government information available to depositories will probably largely determine the willingness of depository libraries to add it to their collection or not. Some formats would involve incurring large fixed costs at the library, with significant local computer systems and electronic storage devices. Such investments in local systems may allow users to find information at very small added cost per inquiry. For example, a library might acquire data on tape and mount the files on magnetic disk drives attached to mainframe computers with powerful search software available to users. Other electronic formats may involve little local investment but require significant incremental cost per inquiry. For example, a datafile may reside on a remote computer with access charges per unit of search levied to recover the cost of the computer time as well as the telecommunications charges.

Patterns of access to government information in electronic formats are likely to parallel patterns already emerging in regard to other electronic information. That is, depositories located in smaller libraries or institutions are more likely to choose the low fixed cost and high incremental cost per search strategy for most electronic information. Depositories located in larger libraries are more likely to choose the high fixed cost and low incremental cost strategy at least for very commonly used datafiles. These larger libraries may be in a position to serve other depository libraries with cost recovery from some source.

What is important to recognize in planning is that different depository libraries can take

advantage of different kinds of electronic products to different degrees. It may be to the advantage of the Depository Library Program if, for some electronic materials, a few libraries serve as intermediaries for all other depositories as well as for other users of information. Moreover, strengthening existing and defining new relationships among depository libraries may be desirable.

How much it would cost a library to expand its role in the Depository Library Program and how some of those costs might be recovered are key considerations. In addition to hardware expenses, the value added by any depository library, be it basic or sophisticated, could be significant.

Examination of Budget Mechanisms

Access to government information through the depository program (and in addition to it) involves costs. The GOVERNMENT bears a significant part of the costs by publishing and distributing material to the depository libraries. The LIBRARY bears a significant part of the cost in the provision of space, professional and clerical staff assistance, the provision of bibliographic access, reference mediation, the continuing maintenance of the collection, and in an increasing number of instances, the provision of the equipment necessary to read or use the documents. USERS bear a significant part of the cost as well, in particular, the time and travel associated with locating and using the materials (as well as through the tax dollar).

Over the history of the depository program, each component involved has responded to the costs involved by building the budgets required to maintain the chain of creation, distribution, integrated bibliographic access, physical accessibility, and use. However, even before the impact of technology began to be so strongly felt, the pressures of budget constraints had begun to affect the historical patterns. The impact of technology and the creation of a whole new paradigm of library services has accelerated the rate of changes and significant adjustments are now being made within library budgets.

In regard to electronic government information, then, there are at least two tensions which must continue to be addressed for resolution: (1) the tension between the goal of increased efficiency (for the government agency, the library, and the user) and the maintenance of equitable access to public information; and (2) the tension involved in the cost shifts in the "creation, distribution, and accessibility chain" as technology has an impact on each component of the chain.

It is clearly important that all of the involved parties ask the correct array of cost questions in order to produce the accurate information upon which will be based a host of future decisions about information products and services.

A college or university library must also take note of relationships its parent institution may be in the process of establishing with business, agribusiness, and other parts of the private sector including programs in support of technology transfer. The growth of university-related research parks is one of the best examples of the mutual benefit which can accrue to higher education and the private sector when cooperation occurs. Academic libraries, by institution mandate and within institution wide policy controls, are more and more closely involved in the support of these mutual endeavors. The fact that the costs and benefits for the private sector and higher education are not mutually exclusive adds yet another layer of complexity to the policy and economic context within which academic libraries provide information and service. Certainly, that layer of complexity is present in the provision of government information in electronic form resulting in another

important element to be considered.

The prospect of the delivery of government information in electronic form through the depository program raises important questions about whose budget will be affected as patterns change: the government agency's, the library's, the user's? Will the costs of the depository program which includes electronic information closely parallel those experienced for print formats? Will the information have relatively the same value as the material in print to the government, to libraries, and to users so that the present array of support for the print program can be extended to support the electronic information?

The answers to such questions depend on the details of the design of a particular file of electronic information and on the policies adopted for implementation. For example, the Government Printing Office or a federal agency might choose to make a database available on-line at zero or nominal charge to the library or user. The depository library might be responsible for providing documentation on the nature of the database, a guide for its use, the telecommunications associated with using the database, and the electronic device used for access.

In another example, GPO might make available to depository libraries a database on magnetic tape at zero or nominal charge. The library might be responsible for mounting the tape on a local computer, providing suitable access software, and providing the computer cycles for gaining access to the database. A user might be responsible for the cost of printing or downloading to other private media.

In a third example, a federal agency may support digitizing equipment, the agency and the library pay for the provision of the information to be digitized, and the library and the user pay for the equipment required to read the electronic information.

These three examples make clear that the nature of costs to the government, the library, and the user will differ markedly for different electronic information products. What is needed is an examination of Federal agency and library budget mechanisms that have supported the statutory responsibilities of the source agency, the GPO, and depository libraries. Questions which need to be asked and answered include:

-- How do we measure current agency costs for the information file? What are the components of the costs for the agency?

-- How do we measure current library costs for the further distribution and storage of the government information? What are the components of costs for the library?

-- Would the new format result in increased use or new users?

-- Do cost savings occur for either the agency or the library in the creation, distribution, and accessibility chain for electronic information?

-- Will costs shift from the agency to the library, or vice versa?

-- Will costs increase for both the agency and the library, but the public benefit of information in a new format balance the cost increase?

- -- Can we anticipate cost substitutions within an agency or library budget so that present budgets can be reallocated instead of supplemented?

- -- Can we anticipate additional costs and, if they exist, are they short-term over the implementation of the new information format, or are they long-term over the life of the information?

- -- What is the relationship of cost to the variety of possible formats? For example, how graphic images are electronically captured and transmitted (in particular, graphic images that are part of a text file) will have a significant impact on the cost of effective delivery.

- -- Which telecommunication networks and/or bibliographic utilities can be effective for distribution of the electronic government information and what are the anticipated costs associated with present and future use?

Examination of these various cost issues would occur for at least three stages: (1) set-up costs; (2) recurring/continuing costs; and (3) life cycle costs. Components will include costs related to equipment needs (including initial costs, maintenance, amortization and replacement, and so forth); telecommunications requirements; the added or different use of computing already in place in the library or the parent body; any necessary added space; physical plant renovation for electrical wiring or computer cabling; staff involvement in the integration of the new formats into collection development, bibliographic access, information mediation, library instruction, and collection preservation functions; the costs inherent in bringing together text databases, numerical databases, graphics databases, and bibliographic control databases in an expanded form of information delivery; the cost of new and more powerful information manipulation and delivery possibilities -- i.e., the expanded user patterns which can result from electronic formats; and the relationship of all of these elements to the whole context of the information taxonomy and the practical and policy concerns implicit therein.

The Need to Include Electronic Formats in the Depository Library Program

Depository libraries need government information in electronic format to fulfill their responsibilities to the public; information should not be excluded from GPO distribution to depositories on the basis of format. Increasingly, more and more government information that was once available in paper reports is now available only in electronic formats. At the same time, more depository users prefer government information in electronic formats in order to retrieve it more effectively, incorporate it directly (without re-keying) into personal or project files, and to be able to derive customized presentation or analysis of data.

Federal agencies should make their information products available to the public through the Depository Library Program, including those in electronic formats. Information of an administrative nature with no public interest or educational value, or that properly classified for reasons of national security, is and should continue to be, excluded from the program.

It is critical that the Government Printing Office initiate distribution of some electronic products to depository libraries immediately in order that participants (within and outside of Government) gain experience with the practical and financial consequences. This experience will contribute information essential for Government and library planning for the future of the program.

Agencies with electronic files should be encouraged to provide information products with convenient interfaces to simplify access by end users. Examples are the *Monthly Catalog of U.S. Government Publications* and the *Code of Federal Regulations* on CD-Rom or the status of bills and an index to legislation on-line. However, the absence of such agency developed interfaces should not exempt the product from the program since depository libraries may elect to purchase or develop software in order to make such products available as part of their depository responsibilities.

The Need to Review and Assess the Program

The inclusion of government information in electronic formats in the Depository Library Program will have a profound and pervasive influence. Congress, the Government Printing Office, and the library community should review the Depository Library Program to assess the impact of electronic products on the program. Issues that should be addressed include: the opportunities now available for restructuring the program to take advantage of electronic information delivery, redefinitions of service responsibilities among all participants, geographic distribution of service points, and, the burden of shared costs among Government agencies, libraries, and users. The reviews should also consider the effectiveness of communication channels among all participants to encourage consultation in the development and implementation by the U.S. Government of public electronic information programs. The reviews should be conducted concurrently with GPO distribution of some electronic products in the program as experience gained in the operation of the program will contribute to an informed and realistic review.

What must be preserved is a program that provides equitable, no-fee access to basic public information for all citizens.

Possible Changes in the Depository Library Program

The findings of the ARL Task Force on Government Information in Electronic Format prompted speculation about how the Depository Library Program might change as a result of these trends. The following description is not presented as a final conclusion but as a suggestion that might stimulate discussion and further analysis within the depository library community and those communities they serve.

Roles for depository library participants may change in some or all of the following ways. First, since requirements for equipment and staff to support a full-service electronic depository collection are considerable, the program may be well served by having just a few libraries support multistate or national public information needs as part of the program. From this there may develop varying levels of responsibility for providing services for electronic products. Some depository libraries may not be able to afford the equipment and/or staff support to provide services for certain kinds of government information in electronic form. Location, however, becomes less consequential as electronic information can be relayed from library to library electronically, recalling however, that the economics of resource sharing may be different.

This may lead to a redefinition of depository library service responsibilities in which government documents and gateways to government information will be focused, along the following lines:

BASIC Services: This level of depository library would serve as an information center in which there would exist a small government document collection and a computerized gateway to electronic government information located elsewhere. The service might be focused more on self-help and on-demand levels. There would be a high cost per transaction but a small fixed cost.

INTERMEDIATE Services: This level of depository library would maintain a larger government document collection and some electronic information and gateways to other electronic information located elsewhere. This library might devise products which would work well through the gateways and might invest in developing value-added approaches to the government information. The service would include more mediation and synthesis than the Basic level.

FULL Services: This level of depository library would contain research level government documents and a full range of electronic information and the most sophisticated gateways to other electronic information. The depository collection would be supplemented by related, locally available databases. The level of service would include the highest levels of value-added characteristics. There would be developed software packages and other approaches which would change wholesale government information into retail government information. The cost per transaction would be low and the fixed cost high.

A second kind of change that might take place within the program involves depository library cost recovery for performing certain functions. Depending on the nature of the information itself and the extent of local investment, depository libraries may begin to recover some or all of the costs associated with adding values to electronic government files.

There remains the commitment to the role that libraries have always played: provider of no-fee access for the general public to government documents. What is highlighted by the prominence of electronic information is that not all government information is the same and that the level of user accessibility provided for electronic products varies tremendously depending on the system characteristics provided by the government or added to it by libraries or other intermediaries. Government information defined as essential for fulfilling the citizenship information needs of the public and for fulfilling government responsibilities should be distributed to depository libraries in a manner that allows libraries to make it available at no-fee.

What may result from such a clarification or refocusing is another category of information--that of considerable importance to a narrow segment of society, important enough to justify agency efforts to collect or generate the file, but which is too costly to justify full tax subsidized value-added enhancements. This kind of information might be distributed to depository libraries on terms that allow some cost recovery mechanism from a source outside the library--the user, a government agency, or perhaps a consortium of users. Therefore this second possible change for the program, that depository libraries may begin to recover all or some of the costs associated with adding value to some electronic government files, is dependent upon the nature of the information itself and the extent of local investment made in order to compensate for costs not incurred by the Government.

For example, some form of reimbursement may be made to support public use of a "deposited" government file that has been significantly enhanced by locally developed software. The point is: if Depository Library Program policies define that the library is to add values to enhance an electronic file, that policy may also define the level of value to be added, who is to be served, and how and who is to pay to support the system.

VI. Conclusion

The Association of Research Libraries issues this report to encourage discussion of technology and U.S. Government information policies and a clearer understanding of how the characteristics of electronic formats affect the availability of information. Technology offers opportunities that may be to the advantage of users and both public and private sectors. However political decisions about meeting Government obligations to provide information should not be contingent on format.

The U.S. Government's obligation to be accountable to citizens, and to make available information created or collected with tax dollars, is fulfilled in part through partnership with public and academic libraries. Circumstances warrant a reassessment of library responsibilities with a view to new opportunities made feasible by technology. This reassessment can only effectively be made when GPO initiates distribution of some electronic products to depository libraries. ARL continues to endorse the inclusion of electronic products in the Depository Library Program and urges GPO action toward this end. ARL seeks to collaborate with others to develop recommendations for changes in the Depository Library Program and encourages those interested in working on this effort to contact the office in Washington, D.C.

APPENDIX

GOVERNMENT INFORMATION IN ELECTRONIC FORMAT

A STATEMENT OF PRINCIPLES

NOTE: The following statement, prepared by the ARL Task Force on Government Information in Electronic Format, was submitted to the membership of ARL in October 1987 for review and will not be acted upon until at least May 1988. It is therefore NOT an official ARL statement but is included in this report to encourage comments from other interested individuals and organizations. Comments should be directed to the ARL Office in Washington, D.C.

In 1985, ARL adopted a "Statement on Access to Information" affirming the Association's commitment to the principle that unrestricted access to and dissemination of ideas are fundamental to a democratic society. Recognizing that legitimate goals of national security and economic competition exist side-by-side with the principle of unrestricted access, ARL concluded that the latter must take precedence unless a clear and public case can be made for restricting access in a specific instance or to a clearly defined body of information.

Increased application of new technological developments (large computer databases with interactive online capabilities, diskettes of data for use in personal computer, laser optical disks, etc.) for the storage and retrieval of U.S. Government information has challenged traditional practices of providing the public with access to this information. The ARL Task Force on Government Information in Electronic Format has reviewed public policy and traditional practices that support citizen availability of U.S. Government information in light of the characteristics of electronic formats. The result is a recommendation that ARL develop a statement of principles that specifically address the public availability of U.S Government information in electronic format. Identification of essential elements or measures against which government information programs might be evaluated in terms of equitable citizen access to U.S. Government information would contribute to efforts at striking the proper balance between competing principles in an environment of fiscal constraint.

Oscar Wilde has said "Truth is rarely pure and never simple." The Task Force understands that a simple, elegant statement of principles is not a short- or long-term solution to making decisions about public availability of U.S. Government information. However, such a statement would clarify ARL's own position on these matters and stimulate further discussions that contribute to a clearer understanding of the challenges faced by librarians, educators, and others engaged in partnership with the U.S. Government to make government information widely available.

The task force has developed the following six principles and encourages full discussion of them in terms of the opportunities, challenges, and financing questions posed by electronic information products.

DRAFT DRAFT DRAFT DRAFT

1. The open exchange of public information should be protected.

The open exchange of public information is essential to the progress of our society and, as a matter of principle, access to electronic information should be as direct and open as access to print products. While there is a legitimate need to protect properly classified information, excessive secrecy on the part of the Government should be opposed. Dissemination of government information to the public through libraries, as geographically convenient and politically neutral sites, is essential and vital in a democracy. The education, research, and library communities should work together to reaffirm their commitment and redefine responsibilities in their partnership with the Government to make unclassified government information broadly and equitably available.

2. Federal policy should support the integrity and preservation of government electronic databases.

If information is worthy of collection and storage, it is worthy of some measure of quality assurance to insure its integrity for future use. In addition, information properly classified for reasons of national security or protected by the Privacy Act should be secure from unauthorized access. Data should be secure from tampering or accidental modification. For information stored electronically, the placement of copies in multiple, decentralized locations rather than in a single source is one way of guarding against irreversible breaches in the integrity of a database. At the same time, because information stored in electronic form may change frequently, special measures may be required to ensure that the information product, at each point of access, is reliable--current, complete, and fully retrievable. For this reason, there may be instances where it is necessary for a government agency to prescribe conditions under which intermediary recipients (for example, a library or commercial vendor) ensure reliability and integrity before making it available to users.

Archival preservation of information stored in electronic databases is an integral part of maintaining the integrity of the records of Government. Some Government files stand as historic records of governmental decision making and of our civilization. Standards for the deposit of information from electronic files, delineation of responsibility, and Congressional funding to support implementation are necessary to ensure that appropriate U.S. Government information is preserved.

3. Copyright should not be applied to U.S. Government information.

Copyright is a private privilege and should not be available for any work of the U.S. Government that is produced with public funds. The Copyright Act prohibition of copyright of U.S. Government works is sound and should extend to work undertaken for the U.S. Government by a contractor or grantee. Policies and practices that allow a Federal agency or a private organization to exert exclusive rights or other kinds of proprietary controls over government information in any format should be resisted.

4. Diversity of sources of access to U.S. Government information is in the public interest and entrepreneurship should be encouraged.

Diversity of sources is important to meet user requirements, including users within government, for sufficiently varied information sources to allow for judgments on data credibility and assessment of government accountability.

Entrepreneurs from the commercial or non-profit sectors, including libraries and bibliographic utilities, may, using Government databases as inputs, produce information products with diverse formats, interfaces, and prices. New information products based on government information should be encouraged to stimulate a competitive environment where there is pressure to keep prices down and quality of service high. However, encouragement of entrepreneurship should not extend to include the granting of exclusive arrangements that result in a single point of access for the information.

Costs to the Government for supporting this diversity are recognized, particularly in conjunction with maintenance of file integrity. However, the costs should be balanced against the advantages of multiple sources of information and the danger of a single source.

5. Government information should be available at low cost.

The federal deficit rightfully highlights the need for reassessment of federal spending patterns. Government activities associated with the public availability of government information have costs associated with them and should be subject to the same scrutiny applied to other parts of agency budgets. Essential to undertaking an effective, long-term view of agency information programs is identification of the purposes that the information content serves, within and outside of government, and a judgment of its relevance to fulfilling government responsibility for making information available.

The test should be whether there is a legitimate governmental role and public need in creating and distributing particular information products, not whether a for-profit firm could sustain an

information product if the government did not have a similar product. The value of tax supported publication has long been recognized for print products. The same logic militates the tax support of particular electronic publications.

Federal funding should be made available to agencies to create and maintain necessary government information products so that user fees and/or high sales prices are not necessary to maintain basic support for the product. The cost to a Government agency of maintaining the quality and timeliness of a database, and of upgrading the information service, should also be funded by Congressional appropriations.

Copies of most government databases should be made available at simple reproduction cost. If a purchaser can reasonably be determined to be a non-U.S. resident or organization that has not contributed to the tax base supporting agency development of the product, a higher price may be justified. Duplicate copies of government databases, even without user-ready interfaces, could be further enhanced by commercial firms, libraries, or other intermediaries to make the information available to the research, scientific, and business communities and/or the general public. This approach prevents any monopoly control over government information and would allow the prices of final products or services to reflect only the value added in the development of end user products and nothing more.

6. A system to provide equitable, no-fee access to basic public information is a requirement of a democratic society.

Since 1895, libraries designated as part of the Congressional Depository Library Program (Chapter 19 of title 44 of the *U.S. Code*) have served as partners with the U.S. Government to make public information readily available to all citizens at no-fee. Information should not be excluded from the Depository Library Program on the basis of format. Federal agencies should make their information products available to the public through the Depository Library Program, including those in electronic formats. Information of an administrative nature with no public interest or educational value, or that properly classified for reasons of national security, is excluded from the program.

Agencies with electronic files should be encouraged to provide information products with convenient interfaces to improve access by end users. Examples are the *Monthly Catalog of U.S. Government Publications* and the *Code of Federal Regulations* on CD-Rom or the status of bills and an index to legislation on-line. However, the absence of such agency developed interfaces should not exempt the product from the program since depository libraries may elect to purchase or develop software in order to make such products available as part of their depository

responsibilities.

The inclusion of government information in electronic formats in the Depository Library Program will have a profound and pervasive influence. Congress, the Government Printing Office, and the library community should review the Depository Library Program to assess the impact of electronic products on the program. What must be preserved is a program that provides equitable, no-fee access to basic public information for all citizens.

Pursuit of the Principles in a Changing World

Technology provides us with an array of new options for making government information available to the public. This positive development however could lead to serious restrictions on access to information if the technology, or any particular medium, is allowed to dictate policy. There are fundamental principles inherent in a democracy that must be reflected in government information policies and these principles should not be dismissed because the format of the information changes.

Inattention to fundamental principles in support of public availability of Government information allows a vacuum to form wherein decisions are based largely on environmental pressures such as political polemics, budgetary constraints, marketplace economics, and/or administrative convenience. Decisions so made can result in practices of benefit to one segment of our society but to the disadvantage of others.

There will inevitably be a need to make trade-offs, weighing one principle against another. For example, diversity of sources of access to information makes it more difficult and costly to ensure that each site has the most recent update to a file, a basic feature of maintaining the integrity of files. Both principles are highly desirable but to some extent work against each another. The point the Task Force emphasizes is the need for policy makers and program administrators to be aware of the critical balances that are sought.

The public good is best served when principles underlying longstanding government information policies, and their significance to other policy goals of the nation, are acknowledged and considered. This awareness should contribute to sound judgments about specific information programs.

The Association of Research Libraries, founded in 1932, is a non-profit organization representing major research libraries of the United States and Canada.

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